S. R. A.—B. A. I. 105

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Issued February 28, 1916.

U. S. DEPARTMENT OF AGRICULTURE,

BUREAU OF ANIMAL INDUSTRY.

A. D. MELVIN, Chief of Bureau.

SERVICE AND REGULATORY ANNOUNCEMENTS.

JANUARY, 1916.

[This publication is issued monthly for the dissemination of information, instructions, rulings, etc., concerning the work of the Bureau of Animal Industry. Free distribution is limited to persons in the service of the bureau, establishments at which the Federal meat inspection is conducted, public officers whose duties make it desirable for them to have such information, and journals especially concerned. Others desiring copies may obtain them from the Superintendent of Documents, Government Printing Office, Washington, D. C., at 5 cents each, or 50 cents a year. A supply will be sent to each official in charge of a station or branch of the bureau service, who should promptly distribute copies to members of his force. A file should be kept at each station for reference.]

CONTENTS.

CHANGES IN DIRECTORY.

Meat Inspection Discontinued.

938. Henry Kast, 277 Greenwich Street, New York, N. Y.

Change in Firm Name.

*17–A. John Morrell & Co. (Inc.), 620–624 West Thirty-sixth Street, New York, N. Y., instead of John Morrell & Co.

Changes of Officials in Charge.

Sioux City, Iowa, Dr. C. M. McFarland instead of Dr. W. J. Stewart.

Wausau, Wis., Dr. R. J. Digman instead of Dr. E. B. Bennett, jr.

*Conducts slaughtering.

Changes in Addresses of Officials in Charge.

Dr. L. B. Vermillion, 1310 Burch Avenue, Cedar Rapids, Iowa, instead of 214 Summit Avenue, Waterloo, Iowa.

Dr. J. S. Jenison, room 316, Live Stock Exchange Building, Union Stock Yards, instead of room 316, Exchange Building, Union Stock Yards, Chicago, Ill.

Note.

Meat inspection extended at establishment 20–C, Sulzberger & Sons Co., to include Empire Provision & Produce Co., a subsidiary company.

NOTICES REGARDING MEAT INSPECTION.

ESTABLISHMENT NUMBERS ON PROOFS OF STENCILS, ETC.

In future when imprints or proofs of stencils, box dies, and brands are submitted for approval, the establishment number should be written on the face of each copy in order that they may be properly associated with the establishment for which they are submitted. This also applies to labels, cartons, and inserts which do not bear the establishment number printed or lithographed thereon.

CERTAIN OILS NOT TO BE DESIGNATED AS OLEO OIL.

Oil obtained from beef or mutton fats rendered at a temperature above 170° F., should not be designated as oleo oil.

ACTINOMYCOSIS IN SWINE.

As the examinations of specimens forwarded to Washington in accordance with instructions in Service and Regulatory Announcements for February, 1915, have amply confirmed the field diagnosis of actinomycosis in swine, it will not be necessary hereafter to forward to Washington lesions from swine carcasses suspected of being affected with actinomycosis, unless the diagnosis is questionable and confirmation is desired.

MEAT AND MEAT FOOD PRODUCTS FROM THE NETHERLANDS EXCLUDED.

The bureau is officially informed that no adequate national system of meat inspection is maintained in Holland. Therefore, as provided by regulation 27 of B. A. I. Order 211, no meat or meat food product originating in that country shall be admitted into the United States. Inspectors in charge will promptly inform prospective importers accordingly.

FLYTRAPS FOR SLAUGHTERING AND MEAT-PACKING ESTABLISHMENTS.

The Bureau of Entomology in cooperation witht the Bureau of Animal Industry has completed very careful and extensive tests of various types of flytraps for use at establishments where Federal meat inspection is maintained. These tests show that for general trapping the conical trap is most efficient, although there is much variation in the effectiveness of the different types of the conical trap. It is shown that the type of conical trap herein described is by far the most effective. Therefore, in order to secure the best results from fly trapping, the managements of official establishments are urged to prepare flytraps during the winter for the following fly season. All new traps should be constructed in accordance with the following instructions and illustrations with the view to securing the best results in trapping, cheapness of construction, ease of repair, durability, and convenience in handling.

CONICAL HOOP TRAP—DIMENSIONS AND CONSTRUCTION.

Figure 1 shows the conical flytrap which is recommended for general use. The height is 24 inches, diameter 18 inches, cone 22 inches high by 18 inches in diameter at base. The frame is constructed of four hoops. Two of these hoops, 18 inches in diameter, are nailed together, the ends being trimmed to give a close fit. These form the bottom of the frame (*A*), and the other two, prepared in a similar way, the top (*B*). The top (*C*) of the trap may be made of an ordinary barrel-head with the bevel edge sawed off sufficiently to cause the head to fit closely in the hoops and allow of secure nailing. A square, 10 inches on each side, is cut out of the center of the top to form a

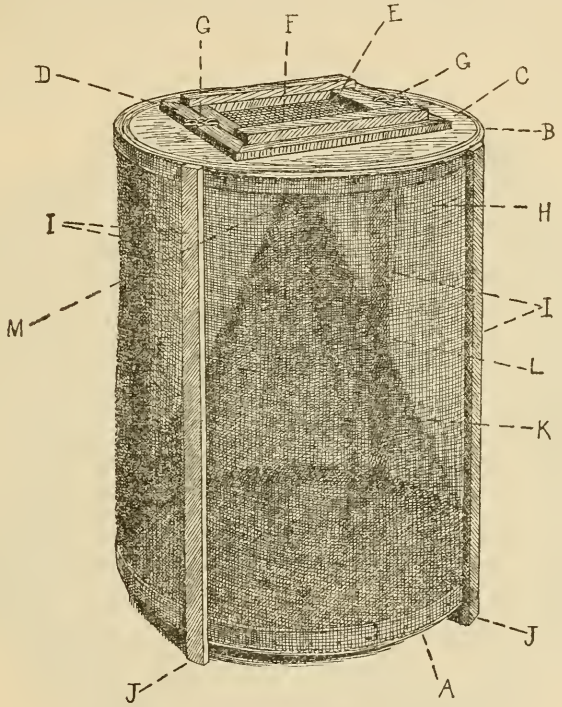


FIG. 1.—Conical hoop flytrap; side view. *A*, Hoops forming frame at bottom. *B*, Hoops forming frame at top. *C*, Top of trap made of barrel head. *D*, Strips around door. *E*, Door frame. *F*, Screen on door. *G*, Buttons holding door. *H*, Screen on outside of trap. *I*, Strips on side of trap between hoops. *J*, Tips of these strips projecting to form legs. *K*, Cone. *L*, United edges of screen forming cone. *M*, Aperture at apex of cone.

door, the portions of the top (barrel-head) being held together by inch strips (*D*) placed around the opening one-half inch from the edge to form a jamb for the door. The door consists of a narrow frame (*E*) covered with a screen (*F*) well fitted to the trap and held in place (not hinged) by the buttons (*G*).

The top is then nailed to the upper hoops and the outer part of the trap (*H*) formed by closely tacking 12 or 14-mesh galvanized screen wire on the outside of the hoops. Four laths (*I*) (or light strips) are tacked to the hoops on the outside of the trap to act as supports between the top and bottom hoops, and the ends are allowed to project 1 inch at the bottom to form legs (*J*). The cone (*K*) is cut from the same kind of screen wire and either sewed with wire or soldered where the edges meet at *L*.

The apex or top of the cone is then cut off to give an opening (*M*) 1 inch in diameter. It is then inserted in the trap and closely tacked to the hoop around the base. Figure 2 shows in detail the construction of the top of the conical trap.

The construction of a cone of any given height or diameter is quite simple if the following method is followed: It is best to cut a pattern from a large piece of heavy paper, cardboard, or tin. Figure 3 illustrates the method of laying out a cone of the proper dimensions for the above trap. An ordinary square is placed on the material from which the pattern is to be cut; a distance (22 inches) equal to the height of the cone is laid off on one leg of the square at *A*, and a distance (9 inches) equal to one-half of the diameter of the base of the cone is laid on the other leg at *B*, and a line is drawn between the points *A* and *B*. With the distance between these points as a radius and with the point *A* as a center the portion of a circle as from *C* to *D* is drawn,

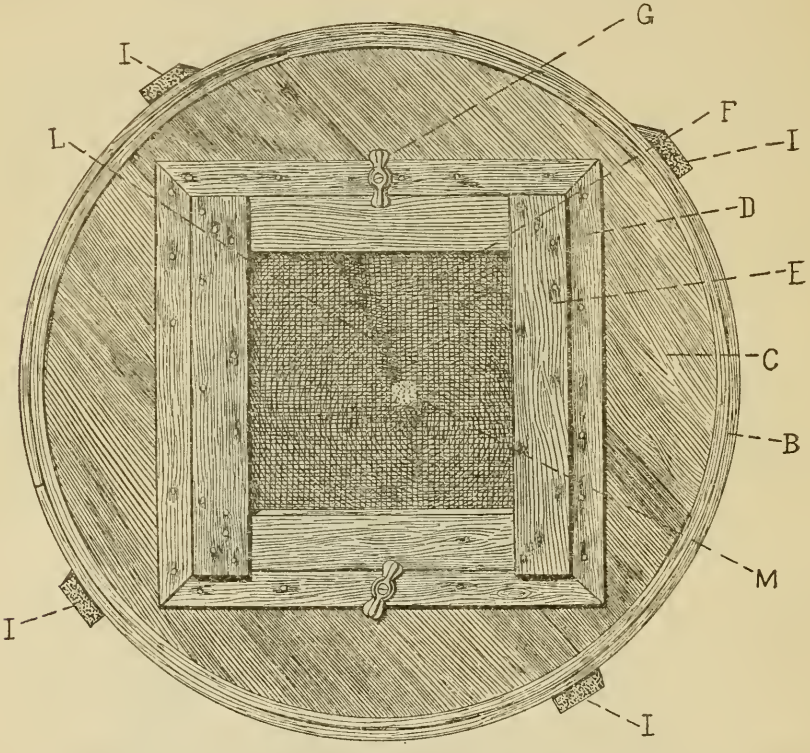


FIG. 2.—Conical hoop flytrap; top view. Letters designate parts as in figure 1.

this distance being rather more than one-third of a complete circle. With a pair of dividers, with the legs set 1 inch apart, or with the square, lay off as many inches on the arc *C*–*D*, starting at *C*, as there are inches around the base of the cone, which in this case is about 56½ inches, reaching nearly to the point *E*. Then add one-half inch for the lapping of the edges of the cone and one-half inch which is taken up when the cone is tacked in, thus making a total distance from *C* to *E* of 57½ inches. Draw a line from *A* to *C* and another from *A* to *E*, and cut out the pattern on these lines. The edges *A*–*C* and *A*–*E* are then brought together, lapped one-half inch, and sewed with wire or soldered. After the opening at the top of the cone is formed by cutting off the apex, it is ready for insertion in the trap.

In order to figure the distance around the base of a cone of any given diameter, multiply the diameter by 3.1416, or 3⅐.

VARIATIONS IN THE CONICAL TRAP.

Conical traps with steel frames may be constructed, but they are less easily rescreened and it is more difficult to keep the lid closely fitted. Traps with wooden disks for the frame at the bottom and top, or those with square wooden frames at the bottom and top with strips up the corners, are fairly satisfactory and may be used if the establishments prefer to construct them rather than the hoop traps. The lower disk is cut out to fit the cone, and the wood around the base of the cone should be as narrow as consistent with strength, about 3 inches. Traps constructed in this way have the diameter of the base of the cone reduced by 6 inches. Thus, with traps 18 inches in diameter, outside measurement, the cone would be only 12 inches in diameter at the base. In such cases the height of the cone should be reduced so as to be about one-fourth greater than the diameter of the base. Under no condition should the sides or top of the trap be of solid material as the elimination of light from the tops or sides has been found to decrease the catch from 50 to 75 per cent.

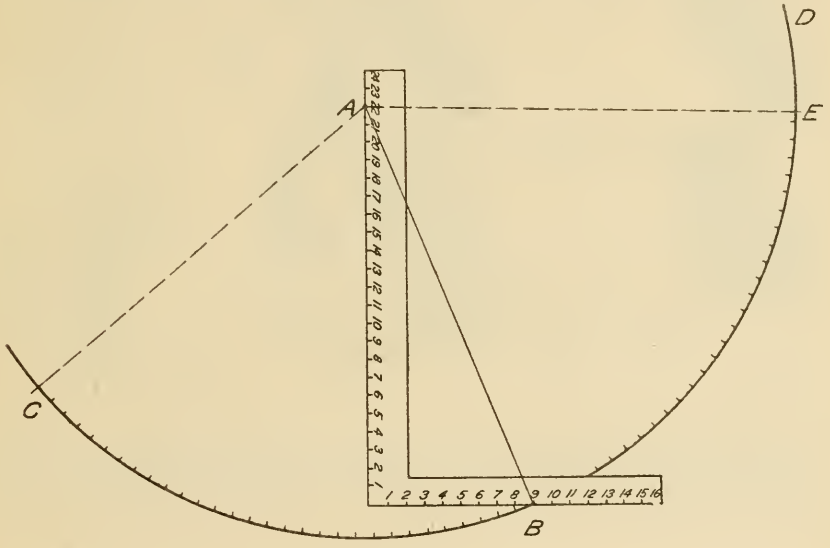


FIG. 3.—Method of laying out a pattern for the construction of a cone. Cut out on curved line C to E and on dotted lines from A to C and A to E.

WINDOW TRAPS.

Figure 4 shows the Hodge type of window trap. Under certain conditions it is desirable to have traps in the windows. This is especially so in edible departments where the doors are opened frequently. These traps take the place of window screens on the windows where they are used and may be inserted in every third or fourth window. They are so constructed as to capture the flies which endeavor to enter or leave the room. This trap is essentially a screen box closely fitted to the frame of a window. The width of the box on the inside (A) should be about 12 inches, and the height slightly less than the lower sash. Instead of the screen running straight down over the box on either side, it is folded inward nearly to the center of the frame in V-shaped folds running longitudinally across the window. One, two, or even more folds may be made in the screen on either side. The upper side of the folds (B) should extend into the box nearly at right angles; that is, parallel with the top and bottom; the lower side (C) should pitch downward as shown in the drawing, making this side about twice the length of the upper. The sides of the frame may be cut

out at the proper angle and the pieces (*D*) returned after the screen has been tacked along the edge. Along the apex (upper edge) of each fold are punched a series of holes (*E*) about one-half inch in diameter and 1 inch apart. The apexes of the folds on either side of the window should not be directly opposite. A narrow door opening downward on hinges should be made on one side of the trap at the bottom (*F*) for removal of dead flies. The entire trap is fastened to the window by hooks so that it may be readily taken off.

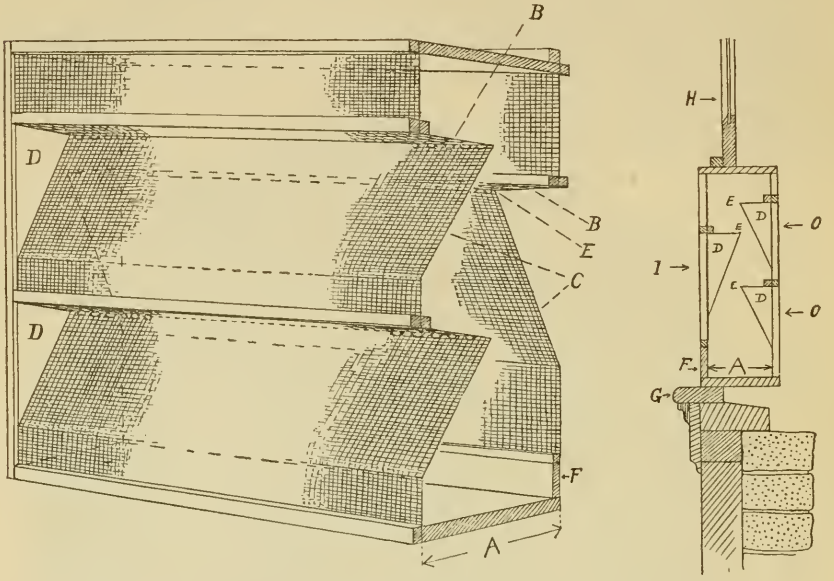


FIG. 4.—Hodge type window trap. At left, trap with end removed to show construction; at right, cross section of trap placed in a window. *A*, End of trap. *B*, Upper side of folds in screen. *C*, Lower side of folds in screen. *D*, Portion of end of trap sawed out and returned after attaching screen. *E*, Holes along apex of folds. *F*, Door for removing dead flies. *G*, Window sill. *H*, Upper window sash. *I*, Inside entrance for flies. *O*, Outside entrances.

ANIMALS SLAUGHTERED UNDER FEDERAL MEAT INSPECTION, DECEMBER, 1915.

City.	Cattle.	Calves.	Sheep.	Goats.	Swine.
Chicago	208,714	24,165	297,571	3,029	1,052,819
Fort Worth	22,670	5,794	5,709	735	45,210
Kansas City	70,510	5,872	88,286	3,652	364,752
National stock yards	67,184	6,228	35,145	2,679	190,170
Omaha	60,234	2,073	172,818	323	249,527
Sioux City	27,148	990	28,991	2	153,894
South St. Joseph	18,539	1,960	55,618	277	254,243
All other establishments	205,647	78,357	356,555	1,067	3,131,218
Total—December, 1915	680,646	125,439	1,040,693	11,764	[1] 5,441,833
December, 1914	682,180	119,211	1,167,069	17,269	4,270,600
Calendar year, 1915	7,153,395	1,818,702	12,211,765	153,346	38,381,228
Calendar year, 1914	6,756,737	1,696,962	14,229,343	175,906	32,531,840

[1] The slaughter of swine in December, 1915, was over 450,000 greater than in any previous month since the inauguration of Federal meat inspection. The previous high record was 4,961,421 in January, 1908.

IMPORTS OF FOOD ANIMALS AND OF MEATS AND MEAT FOOD PRODUCTS.

The statements following show the imports of food animals and of meats and meat food products inspected by the Bureau of Animal Industry during December, 1915, with figures for other periods for comparison.

Imports of food animals.

Country of export.	Cattle.	Swine.	Sheep.	Goats.
Mexico	14,436	6	3,947	1,098
Canada	11,524	78	1,428	.....
Total—December, 1915	25,960	84	5,375	1,098
December, 1914	55,167	36,727	18,919	4,383
Calendar year, 1915	562,658	56,756	262,226	98,244
Calendar year, 1914	756,345	211,005	179,706	174,284

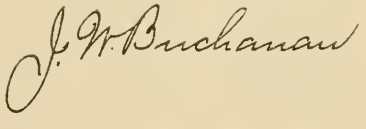
Imports of meats and meat food products.

Country of export.	Fresh and refrigerated.		Canned and cured meats.	Other products.	Total.
	Beef.	Other.			
Argentina	5,253,402	2,887,940	194,218	274,693	8,610,253
Australia	.....	.....	.....	4,452	4,452
Canada	1,252,452	88,341	65,853	188,454	1,595,100
New Zealand	.....	.....	6,347	.....	6,347
Uruguay	942,733	.....	.....	.....	942,733
Other countries	.....	.....	21,733	18,510	40,243
Total—December, 1915	7,448,587	2,976,281	288,151	486,109	11,199,128
December, 1914	10,546,297	1,995,594	1,082,229	572,473	14,196,593
Calendar year, 1915	133,353,305	17,510,216	4,880,538	2,428,597	158,172,656
Calendar year, 1914	241,563,588	36,299,616	30,045,423	6,579,353	314,486,980

Condemned in December, 1915: Beef, 10,744 pounds; veal, 400 pounds; mutton, 23 pounds; pork, 951 pounds; total, 12,118 pounds. Refused entry: Beef, 9,892 pounds; pork, 132 pounds; total, 10,024 pounds.
Correction: In Service and Regulatory Announcements for December, 1915, the total imports for January-November, 1915, should read as follows, instead of the figures printed: Fresh beef, 125,904,718 pounds; other fresh meats, 14,533,935 pounds; canned and cured meats, 4,592,387 pounds; other products, 1,942,488 pounds; total, 146,973,528 pounds.

FOREIGN OFFICIAL AUTHORIZED TO SIGN INSPECTION CERTIFICATES FOR MEAT AND PRODUCTS FOR IMPORTATION INTO THE UNITED STATES.

The foreign national government official whose name, address, and facsimile signature is given below is authorized to sign and issue certificates of inspection for meat and meat food products offered for importation into the United States:

Country, name, and address.	Signature.
Panama. J. W. Buchanan, care of Quarantine Station, Cristobal, Canal Zone.	

LICENSES AND PERMITS FOR VETERINARY BIOLOGICAL PRODUCTS.

Licenses for the manufacture and permits for the importation of veterinary biological products have been issued as follows for the calendar year 1916, under the act of Congress of March 4, 1913 (37 Stat., 832), and the regulations made thereunder (B. A. I. Order 196). This list supplements that published in Service and Regulatory Announcements for December, 1915, page 132.

Licenses for the manufacture of veterinary biological products.

License No.	Date of issue.	Name and address.	Products.
36	Jan. 13, 1916	The Lewisburg Laboratory, Lewisburg, W. Va.	Strepto bacterin No. 1; mixed bacterin No. 10-M; mixed bacterin No. 11-M; colon bacterin No. 4; mixed bacterin No. 9-M; autogenous bacterins.
37	Dec. 30, 1915	Sioux City Serum Co., Sioux City, Iowa.	Anti-hog-cholera serum; hog-cholera virus.
52	Jan. 13, 1916	The Cutter Laboratory, Sixth and Grayson Streets, Berkeley, Cal.	Blackleg vaccine; anthrax vaccine; tuberculin; mallein; tetanus antitoxin; antistreptococcic serum; distemper and influenza serum; antisuppurine (a polyvalent bacterial vaccine); mixed pneumonia vaccine; streptococcic vaccine; anti-influenza vaccine; dog distemper vaccine; calf scours serum; calf scours vaccine; antianthrax serum; anthrax spore vaccine.
78	Jan. 10, 1916	The Regents of the University of California, Oakland, Cal.	Anti-hog-cholera serum; hog-cholera virus.
78	Jan. 13, 1916	.....do.....	Vaccine for prevention of chickenpox (epithelioma contagiosum) in fowls.
80	Jan. 3, 1916	Tri-State Serum Co., Leech Street and Floyd River, Sioux City, Iowa.	Anti-hog-cholera serum; hog-cholera virus.
85	Jan. 4, 1916	The Western Laboratories, Twenty-fourth Street and Broadway, Oakland, Cal.	Do.
85	Jan. 13, 1916	.....do.....	Leucocytic extract (Archibald), lymph gland extract (Archibald); autogenic and stock bacterins.

Permit for the importation of veterinary biological products.

Permit No.	Date of issue.	Name and address of firm.	Products.
2	Dec. 31, 1915	Pasteur Laboratories of America, New York, N. Y.	Antianthrax serum; antitetanic serum; antistreptococcic serum; tuberculin; mallein; anthrax vaccine; fowl-cholera vaccine; septic pneumonia sera; dysentery germ-free extract; fowl-cholera serum; abortoform; polyvalent bacterin; polyvalent and mixed bacterins; polyvalent strepto bacterin; antistrangles serum; canine distemper serum; blackleg vaccine; blackleg serum.

CONVICTIONS FOR VIOLATIONS OF LAWS.

MEAT-INSPECTION LAW.

For violation of the meat-inspection law the following-named defendants were fined the amounts indicated below:

Fred S. Balliett, Augusta, Wis., $75.
John Sowatzki, Vesper, Wis., $50.
William Schutz, sr., Howells, N. Y., $5.
J. George Stiefel, Camden, N. J., $25.
Raffaele Cascone, Brooklyn, N. Y., $10.
The Mohican Co., New Haven, Conn. (2 cases), $25 and costs each.
Cudahy Packing Co., Hartford, Conn., $25.

H. T. Chase, Jericho, Vt., $75.
William J. Haines, Ledyard, N. Y., $25.
Willard R. Blinebry, Hamilton, N. Y., $15.
Monta M. Scott, Berkshire, N. Y., $20.
Wesley C. Alger, Greene, N. Y., $10.
Hawkins & Withington, Providence, R. I., $20 each.
George Floto, Martins Ferry, Ohio, $25 and costs.
Paul Rudzinski, Wheelcreek, Ohio, $25 and costs.
Felix Demoulin, Luxemburg, Wis., $10.
John Lechner, Dunkirk, N. Y., $25.

QUARANTINE LAWS.

The following results of prosecution for violations of the live-stock quarantine law were reported to the bureau during the month of January, 1916:

Number of cases.	Defendant.	Nature of violation.	Penalty.	
			Fine.	Costs.
1	Southern Express Co.	Interstate shipments in violation of Texas-fever regulations.	$100.00	$59.00
2	Southern Ry. Co.	....do....	200.00	36.80
1	Leroy Agnew	....do....	100.00	.....
1	Jim W. Sweatman	....do....	100.00	.....
2	St. Louis & San Francisco R. R. Co.	....do....	[1] 200.00	.....
6	Chicago, Rock Island & Pacific Ry. Co.	....do....	[1] 300.00	.....
1	Missouri, Kansas & Texas Ry. Co.	....do....	[1] 400.00	.....
1	Missouri, Oklahoma & Gulf Ry. Co.	....do....	[1] 100.00	.....
1	Gulf, Colorado & Santa Fe Ry. Co.	....do....	[1] 100.00	.....
1	Mike Russo	Interstate shipments in violation of foot-and-mouth regulations.	100.00	.....
1	Thos. O'Brien	....do....	100.00	.....
1	Carl Marx	....do....	[1] 100.00	.....
1	Louisville & Nashville R. R. Co.	Interstate shipments in violation of hog-cholera regulations.	100.00	.....
1	Messrs. Van Woerden & Fisher	Interstate shipments in violation of tuberculosis regulations.	[2] 150.00	.....
	Total (21 cases)		2,300.00	95.80

[1] And costs. [2] Each.

TWENTY-EIGHT HOUR LAW.

The following results of prosecutions for violations of the 28-hour law were reported to the bureau during the month of January, 1916.

Number of cases.	Defendant.	Penalty.	
		Fine.	Costs.
1	Adams Express Co.	$100.00	$14.52
3	Kansas City Southern Ry. Co.	300.00	54.76
1	Southern Ry. Co.	[1] 100.00	.....
3	Atchison, Topeka & Santa Fe Ry. Co.	[1] 300.00	.....
7	Oregon Short Line R. R. Co.	700.00	24.00
1	Missouri, Kansas & Texas Ry. Co.	[1] 100.00	.....
4	Missouri Pacific Ry. Co.	[1] 400.00	.....
3	Lehigh Valley R. R. Co.	300.00	27.00
1	Chicago, Rock Island & Pacific R. R. Co.	[1] 200.00	.....
23	Chicago, Milwaukee & St. Paul R. R. Co.	[1] 3,250.00	.....
6	Illinois Central R. R.	[1] 600.00	.....
	Total (53 cases)	6,350.00	120.28

[1] And costs.

VIRUS-SERUM-TOXIN LAW.

In the cases of Nicholas C. Nelson, trading as the Nelson Serum Co., charged with violating the virus-serum-toxin act of 1913, by shipping interstate anti-hog-cholera serum which was not prepared at an establishment holding an unsuspended and unrevoked license, the defendant pleaded guilty and was fined $5 and costs in each case.

CRIMINAL CODE.

In the case of the United States *v.* Ray Shannon, Marshalltown, Iowa, for violation of section 62 of the criminal code in committing an assault upon Nick Lunkley, an inspector of the bureau, the defendant pleaded guilty and was fined $100 and costs.

APPROVED DISINFECTING SOLUTIONS.

The following is a complete list of the saponified cresol solutions permitted, in accordance with the provisions of amendment 6 to B. A. I. Order 210, as substitutes for cresol compound, U. S. P., in the general disinfection of cars, yards, and other premises:

"*Licresolis,*" manufactured by the West Disinfecting Co., New York, N. Y.

"*Cre-septic,*" manufactured by the Theo. B. Robertson Soap Co., Chicago, Ill.

"*Crestall Dip,*" manufactured by Baird & McGuire, Boston, Mass.

"*Van Schaack's Liquor Cresolis Comp.,*" manufactured by Peter Van Schaack & Sons, Chicago, Ill.

"*Midland Cresol Compound,*" manufactured by the Midland Chemical Co., Dubuque, Iowa.

"*Cooper's Compound Cresol Solution,*" manufactured by William Cooper & Nephews, Chicago, Ill.

ECONOMY IN EXPENDITURES NECESSARY.

It is found that retrenchment in expenditures is necessary if the bureau's activities are to be conducted as planned for the current fiscal year. Every employee who is authorized to expend bureau funds in travel or otherwise is requested to cooperate in keeping down expenditures as much as possible in order to avoid any necessity for curtailment of forces by furloughs.

PUBLICATIONS IN JANUARY.

[The bureau keeps no mailing list for sending publications to individual employees, but publications are sent in bulk to inspectors in charge for distribution to members of their forces. The number of copies varies with the subject or nature of the publication and the number and class of employees. For example, in the case of a publication on a veterinary subject, sufficient copies are sent for the veterinarians. Inspectors in charge will use their judgment and distribute publications to best advantage. Additional copies will be furnished on request so far as possible.]

Department Bulletin 319. Fermented Milks. By L. A. Rogers, bacteriologist in charge of research laboratories, Dairy Division. Pp. 31, fig. 1.

Department Bulletin 342. The Present Status of the Pasteurization of Milk. By S. Henry Ayers, bacteriologist, Dairy Division. Pp. 16, fig. 1.

Biochemical Comparisons Between Mature Beef and Immature Veal. By William N. Berg, biological chemist, Pathological Division. Pp. 667–711, figs. 6. (Reprint from the Journal of Agricultural Research, January 10, 1916.)

Cattle Ticks Worse Than a Wound. (Unnumbered leaflet.)

Growing and Handling Western Wools. (Unnumbered leaflet.)

Amendment 6 to B. A. I. Order 210. Regulations Governing the Interstate Movement of Live Stock. (Amends the regulations relative to permitted disinfectants and supersedes Amendment 5 to B. A. I. Order 210.)

Amendment 42 to B. A. I. Order 238. To Prevent the Spread of Foot-and-Mouth Disease in Cattle, Sheep, Other Ruminants, and Swine. (Modifies the quarantine in relation to the State of Illinois.)

Amendment 43 to B. A. I. Order 238. (Modifies the quarantine in relation to the State of Illinois.)

Amendment 44 to B. A. I. Order 238. (Modifies the quarantine in relation to the State of Illinois.)

Amendment 45 to B. A. I. Order 238. Modifies the quarantine in relation to certain counties in Illinois and places Christian County under closed quarantine.)

PUBLICATIONS AVAILABLE FOR DISTRIBUTION.

The bureau has at its disposal a limited supply of the following publications and will send copies on request while the supply lasts:

A Study of Methods of Canning Meats, With Reference to the Proper Disposal of Defective Cans. 1907.

The Use of Metallic Containers for Edible Fats and Oils. 1909.

Immunization Tests in Tetanus. 1911.

Further Investigations on Verminous Diseases of Cattle, Sheep, and Goats in Texas. 1902.

Bighead in Sheep. 1914.

Special Report on the History and Present Condition of the Sheep Industry of the United States. 1892.

Animals Imported for Breeding Purposes. Cattle, 1913.

Animals Imported for Breeding Purposes. Horses, 1913.

Bulletin 38. Tuberculosis of the Food-Producing Animals. 1906.

Bulletin 81. The Milk Supply of Boston, New York, and Philadelphia. 1905.

Bulletin 123. The Influence of Lactic Acid on the Quality of Cheese of the Cheddar Type. 1910.

Bulletin 124. Methods and Standards in Bomb Calorimetry. 1910.

Bulletin 130. Studies on the Biology of the Texas Fever Tick. 1911.

Bulletin 135. A Comparative Study of Methods of Examining Feces for Evidences of Parasitism. 1912.

Bulletin 147. Fattening Calves in Alabama. 1912.

Bulletin 153. The Action of Anthelmintics on Parasites Located Outside of the Alimentary Canal. 1912.

Bulletin 154. Methods of Classifying the Lactic Acid Bacteria. 1912.

Bulletin 155. The Influence of the Stage of Lactation on the Composition and Properties of Milk. 1913.

Bulletin 165. The Manufacture of Cheddar Cheese from Pasteurized Milk. 1913.

Bulletin 167. The Action of Arsenical Dips in Protecting Cattle from Infestation from Ticks. 1913.

Circular 14. Check List of Animal Parasites of Geese. 1896.

Circular 68. Diseases of the Stomach and Bowels of Cattle. 1905.

Circular 96. Actinomycosis, or Lumpy Jaw. 1906.

Circular 125. The Federal Meat-Inspection Service. 1908.

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